1863MNRAS..23..255.

Eclipses of Jupiter's Satellites.

Observed by Mr. Main with the telescope of the Heliometer:—

1863.		h	m	s	
April 1	Disappearance of 2d Satellite at	12	14	18·5	Oxford M.T.
28	Reappearance of 1st Satellite at	11	1	41·0	,,

M. Foucault's Apparatus for producing Uniform Motion.

(*Communicated by Lieut.-Col. R. Strange.*)

On a recent visit to Paris, M. Foucault was good enough to show me the new clock-work, just completed by the firm of Secretan, intended to drive the Great Equatoreal of the Paris Observatory.

M. Foucault has for some time been occupied with this subject, and has at length arrived at results with which he is himself perfectly satisfied, and which are also considered equally satisfactory by the authorities at the Observatory—the motion controlled by this apparatus being sensibly uniform under all possible changes in the motive force, and variations of friction and resistance.

I myself witnessed the following experiment:—The clock-work being detached from the Equatoreal (to which it had not yet been finally fitted), the full weight (about 58 lbs.) was applied; and the instrument being adjusted for rate, the revolving index was timed by a chronometer for about half an hour, during which period no sensible variation of rate of revolution could be detected. Half the driving weight was then removed without stopping or in any way readjusting the instrument, and the revolution of the index was again carefully observed, but no variation of the smallest perceptible fraction of a second could be detected.

M. Foucault assured me that the instrument had been subjected to far more severe and protracted trials than the above, and with the same results; and he affirms that, for all practical purposes, the problem of obtaining uniformity of rotation under considerable changes of resistance is absolutely solved.

I shall not attempt to describe from memory a machine of which a full account will shortly be published by its distinguished contriver, by whom this important invention has been patented in France and England. My object in mentioning the subject is to induce those who are either engaged in the

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same research, or who propose ordering any contrivance of this kind, to pause until M. Foucault's arrangement is made known.

I should add, that I have M. Foucault's permission to make the above communication to the Royal Astronomical Society.

London, June, 1863.

Ephemeris of Winnecke's Comet of Short Period, about the Time of Perihelion Passage, 1863. By J. R. Hind, Esq.

(*From Dr. Seeling's Elements, Ast. Nach. No.* 1319.)

Greenwich Mean Midnight.	R.A.		Decl.		Log. Dist. from Earth.		Log. Dist. from Sun.	
1863.	h m	m	° ′	° ′				
Nov. 2	15 9·1		−13 23		0·2569		9·9265	
		+19·7		−1 42		−77		−131
6	15 28·8		15 5		0·2492		9·9134	
		20·7		1 38		72		111
10	15 49·5		16 43		0·2420		9·9023	
		21·6		1 34		66		85
14	16 11·1		18 17		0·2354		9·8938	
		22·5		1 27		58		56
18	16 33·6		19 44		0·2296		9·8882	
		23·3		1 18		49		−22
22	16 56·9		21 2		0·2247		9·8860	
		23·8		1 7		39		+11
26	17 20·7		22 9		0·2208		9·8871	
		24·3		0 55		28		45
30	17 45·0		23 4		0·2180		9·8916	
		24·7		0 42		17		75
Dec. 4	18 9·7		23 46		0·2163		9·8991	
		24·8		0 26		−4		103
8	18 34·5		24 12		0·2159		9·9094	
		24·7		−0 12		+10		125
12	18 59·2		24 24		0·2169		9·9219	
		24·3		+0 3		23		142
16	19 23·5		24 21		0·2192		9·9361	
		23·8		0 17		37		155
20	19 47·3		24 4		0·2229		9·9516	
		23·1		0 30		49		164
24	20 10·4		23 34		0·2278		9·9680	
		22·2		0 41		61		170
28	20 32·6		22 53		0·2339		9·9850	
1864.		21·3		0 50		72		172
Jan. 1	20 53·9		22 3		0·2411		0·0022	
		20·4		0 59		81		172
5	21 14·3		21 4		0·2492		0·0194	
		19·3		1 5		90		170
9	21 33·6		19 59		0·2582		0·0364	
		18·3		1 10		97		168
13	21 51·9		18 49		0·2679		0·0532	
		17·4		1 13		102		164
17	22 9·3		17 36		0·2781		0·0696	
		16·5		1 16		107		160
21	22 25·8		16 20		0·2888		0·0856	
		15·6		1 16		110		156
25	22 41·4		15 4		0·2998		0·1012	
		14·8		1 17		111		151
29	22 56·2		13 47		0·3109		0·1163	
		14·1		1 16		113		146
Feb. 2	23 10·3		12 31		0·3222		0·1309	
		13·3		1 16		114		141
6	23 23·6		11 15		0·3336		0·1450	
		12·7		1 15		113		137
10	23 36·3		10 0		0·3449		0·1587	
		+12·2		+1 12		+112		+132
14	23 48·5		− 8 48		0·3561		0·1719	

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